



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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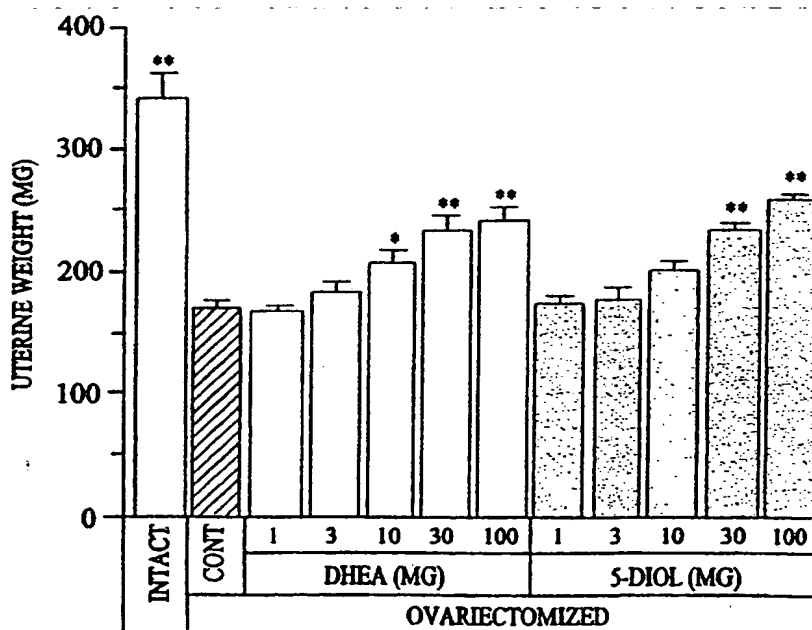
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2 November 2000 (02.11.00)

(54) Title: PHARMACEUTICAL COMPOSITIONS AND USES FOR ANDROST-5-ENE-3 $\beta$ ,17 $\beta$ -DIOL

## (57) Abstract

Androst-5-ene-3 $\beta$ ,17 $\beta$  diol is used to treat or reduce the likelihood of acquiring osteoporosis or menopausal symptoms, or other diseases affected by estrogen receptor activity, like vaginal atrophy, hypogonadism, diminished libido, skin atrophy, urinary incontinence, ovarian cancer, uterine cancer, endometriosis, obesity, cardiovascular disease, loss of muscle mass, loss of energy or fatigue, Alzheimer's disease and loss of memory and for conditions which respond well to DHEA treatment, but where a higher ratio of estrogenic to androgenic effects is desired. Combination therapies are included, as are kits and pharmaceutical compositions for providing the active ingredients of claimed methods and combinations.

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## INTERNATIONAL SEARCH REPORT

Int'l. Application No

PCT/CA 99/00537

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 A61K31/565

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, MEDLINE, WPI Data, CHEM ABS Data, BIOSIS, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	WO 94 16709 A (ENDORECHERCHE INC) 4 August 1994 (1994-08-04) abstract page 21, line 12 -page 38, line 3; claims 1-28	1  24
P,X	WO 98 56386 A (CAMPOVO TIZIANO ;SUNNIMEX LTD (GB)) 17 December 1998 (1998-12-17)  abstract page 3, line 3 -page 12, line 4; claims 1-13	1-4,6-8, 10, 13-15, 25-27
X	US 5 387 583 A (LORIA ROGER M) 7 February 1995 (1995-02-07) abstract; claims 1-7	1-8,26, 27

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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

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"Z" document member of the same patent family

Date of the actual completion of the international search

7 August 2000

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 99/00537

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X	TOURNIAIRE: "les limites de l'androgenotherapie" CAH. MED., vol. 15, no. 9, 1974, pages 583-588, XP002129030 abstract page 584, column 2, paragraphs 1-5 page 587, column 1, paragraph 1 ---	1,12
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International Application No

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In. . .ational Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	<p>PASQUALINI J.R.: "Role of androgens in breast cancer." JOURNAL OF STEROID BIOCHEMISTRY AND MOLECULAR BIOLOGY, vol. 45, no. 1-3, - 1993 pages 167-172, XP000921485 abstract page 170, column 2</p>	24
X	<p>WO 97 03676 A (CABO SOLER JOSE ; CALDERON GOMEZ JESUS (ES); PALACIOS GIL ANTUNANO) 6 February 1997 (1997-02-06) abstract page 3, line 24-31</p>	24
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X	<p>DOWSETT M.; CANTWELL B.; LAL A.; JEFFCOATE S.L.; HARRIS A.L.: "Suppression of postmenopausal ovarian steroidogenesis with the luteinizing hormone - releasing hormone agonist goserelin." JOURNAL OF CLINICAL ENDOCRINOLOGY AND METABOLISM, vol. 66, no. 4, 1988, pages 672-677, XP000923071 abstract page 672, column 1 -column 2, paragraph 1 page 676, column 1, paragraph 4 -column 2, paragraph 2</p> <p style="text-align: center;">-/--</p>	24

# INTERNATIONAL SEARCH REPORT

Int. .dional Application No

PCT/CA 99/00537

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	WO 93 16704 A (UNIV EAST CAROLINA) 2 September 1993 (1993-09-02) abstract	24

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA 99/00537

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 8-27 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.



FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-23,25-27

Pharmaceutical compositions and their use (i) in the treatment of symptoms of menopause, vaginal atrophy, hypogonadism, osteoporosis, diminished libido, skin atrophy, urinary incontinence, ovarian cancer, uterine cancer, skin dryness, endometriosis, obesity, cardiovascular disease, atherosclerosis, insulin resistance, loss of muscle mass, loss of energy or fatigue, Alzheimer disease, (ii) in a method of contraception.

2. Claim : 24

Use of dehydroepiandrosterone in association with other compounds as defined in claim 24 in the treatment of breast cancer, uterine cancer, ovarian cancer or endometriosis.

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

## Continuation of Box I.2

Present claim 24 relates to a product/compound/method defined by reference to a desirable characteristic or property, namely antiestrogen, androgenm inhibitor of aromatase, inhibitor of 17beta hydroxysteroid dehydrogenase, LHRH agonist or antagonist.

The claims cover all products/compounds/methods having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products/compounds/methods. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product/compound/method by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the products/compounds/methods as disclosed on page 22, paragraph 2 of the description.

The term "pro-drug" is not clear in the present context since it is not clear which compounds are metabolised by or in the human body into the mentioned compound.

The term "treating or reducing the likelihood of acquiring reduced or imbalanced concentrations of sex steroids" is not clear in relation to a therapeutic use because it is not exhaustively known which diseases are associated with reduced or imbalanced concentrations of sex steroids.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 99/00537

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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